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Circular Letters:

Transmission of Epidemic Gastro-Enteritis to Human Volunteers by Oral Administration of Fecal Filtrates: Numerous outbreaks of gastro-enteritis occurred in New York State institutions during the fall and winter of 1946-47. The disease was characterized by sudden onset, with profuse diarrhea, usually accompanied by vomiting, and by a lack of fever. Symptoms ordinarily persisted for about 3 days. Bacteriologic examinations failed to reveal agents known to cause enteric disease and postmortem investigations also failed to indicate the nature of the etiologic agent. A search was therefore undertaken for a nonbacterial pathogen. Following successful preliminary experiments in animals, the illness was reproduced and transmitted in series in human volunteers. The responsible agent was shown to be filtrable. Oral administration of stool suspensions or throat washings induced the disease, but inhalation of nebulized throat washings did not. Volunteers who were fed material from the third embryonated egg passage likewise remained asymptomatic. (J. Exper. Med., 1 Nov '47 - I. Gordon et al.)

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The Hepatitis of Hyperthermia: Patients receiving intensive artificial fever therapy occasionally develop jaundice. This phenomenon has recently been reported as a major complication of therapeutic hyperthermia by several different groups of observers. The incidence of jaundice has been reported to have been as high as 19 per cent.

The clinical course of these jaundiced patients is characteristic. Usually within the first 24 hours following fever, exaggerated nausea and vomiting occur. Within 48 hours the urine is dark and jaundice becomes apparent. There may be upper abdominal discomfort and tenderness over the liver. Fever, if present, is slight. In the great majority of cases the jaundice promptly disappears, usually within a week, and the patient rapidly recovers from the accompanying symptoms.

Although there is general agreement that the jaundice is the result of liver damage rather than of excessive blood destruction, divergent opinions have been expressed concerning the pathogenesis of the underlying hepatic disorder. The theory propounded by Brown et al. - that inadequate replacement of salt and water is chiefly responsible for the jaundice - is widely held by those using artificial fever. MacDonald suspected the sulfonamides, which are frequently administered simultaneously. More recently speculation has centered on the possibility of a virus as the etiologic agent.

Descriptions of the histopathology of the liver could be found in only 2 cases, presumably because fatal terminations are rare. Both descriptions are brief and lack illustrations. Wilbur and Stevens reported their findings in a patient who received artificial fever therapy, developed jaundice, and died on the third day after treatment; the liver weighed 2350 Gm. and showed a diffuse early necrosis. Chunn and Kirkpatrick described a similar case in which death

occurred on the fourth day after fever and examination revealed a liver weighing only 1320 Gm. and showing extensive atrophy.

The purpose of this paper is to report another series of hypertherm treatments in which jaundice appeared as a complication.

During the early years of the war, all patients with sulfonamide-resistant gonorrhea among American forces in the Southwest Pacific were referred to a single Army general hospital for fever therapy. Only men in good physical condition were subjected to this rather rigorous form of therapy. Each received 5 Gm. of sulfathiazole over a period of 18 hours prior to entering the cabinet. Heat was produced by ordinary incandescent lamps, and a high humidity was maintained. A treatment was considered satisfactory only when the rectal temperature could be maintained between 106 and 107° F. for 7 hours. This degree and duration of fever were attained in a total of 524 treatments administered to 404 patients. All patients received physiologic saline solution by mouth and by vein during treatment. Sedatives were given to control restlessness. Oxygen was used when indicated.

Of the 404 patients so treated, 24 (6 per cent) developed clinical jaundice within a few days. In the great majority of cases the clinical course resulting from the complication differed in no way from that described above. However, severe liver damage developed in one patient who eventually died. In the pathological study, the liver showed extensive necrosis followed by regeneration.

That the sulfonamides play no part in the production of posthypertherm hepatitis was demonstrated by Wallace and Bushby, who showed that the incidence of jaundice was no greater among patients simultaneously receiving sulfonamides than among those not receiving them.

The possibility that the hepatitis of hyperthermia is of virus origin has occurred to several observers. Such a concept presupposes the presence of a hepatotoxic agent latent in the body and in some way activated by the treatment. Fever therapy was repeated in 2 of MacDonald's jaundiced patients and in one of the author's. In none of these 3 cases did clinical jaundice reappear after the second treatment.

The virus of herpes simplex is harbored by many people, and when the proper stimulus, including heat, is forthcoming, clinical herpes appears. Herpes labialis has always been a common complication of artificial fever therapy. It occurred in 66 per cent of the author's cases. Although the intranuclear inclusion bodies found in the liver in the patient who died are indistinguishable from those found in herpes simplex infections, it is not considered that this implied a herpetic or other virus as the etiologic agent for the hepatitis. Inclusion bodies of one sort or another have been described and produced in a great variety of conditions not attributable to a virus. Inclusion bodies indistinguishable from those of yellow fever, for example, have been observed in liver cells of burned patients treated with tannic acid. Furthermore, the virus of herpes is not known to infect the liver of man or animal.

The patient who died, like all military personnel in the theater, had previously received attenuated yellow-fever-virus vaccine. At the time the fever treatments were being given, hepatitis was fairly prevalent among the troops. Whether "epidemic" and "serum" hepatitis are in reality the same disease has not yet been established. It has been amply demonstrated, however, that the serums of certain persons at times harbor a hepatotoxic virus. Whether it can be activated by fever is at the moment unknown. Morphologically, except for the presence of inclusion bodies, the findings in the liver in the case of the patient who died bears many similarities to the pathology of infectious hepatitis described by Lucke and many others. From a clinical point of view, however, the hepatitis that follows fever therapy is as a rule less severe and of considerably shorter duration than the infectious hepatitides.

It is believed that the high body temperatures employed constitute a more probable cause of this form of hepatitis. Although the critical temperature above which liver cells become irreversibly damaged is unknown and probably varies to a certain extent with the state of nutrition of the individual cells, there is evidence that this point is not far above those frequently encountered. King et al. showed that the incidence of jaundice among patients receiving fever therapy was higher in a group whose temperatures were maintained at 106.6° F, than in a group held at 106.0° F. More significantly, they noted that jaundice was particularly likely to occur if the temperature was allowed to rise for even brief periods above the former figure. Evidence also exists that the majority of patients receiving intensive fever therapy suffer some degree of liver damage, even though clinical jaundice fails to appear. The same authors showed that in a group of 40 consecutive cases a subclinical rise in serum bilirubin occurred in 75 per cent. Hippuric acid tests performed before treatment and repeated three days later showed a significant reduction in liver function in 12 cases. Wilson and Doan studied a similar group of patients and found a post-therapeutic rise in bilirubin and an increased retention of bromsulfalein in each case; the degree and duration of fever were not recorded.

Opportunity for studying the morphologic effects on the human liver of high temperatures does not occur often because hyperpyrexia usually brings death within a few hours, or the patient survives. In prompt deaths, signs of cerebral damage dominate the clinical and pathological picture. Occasionally, however, the survival period is adequate for clinical signs of liver failure and for morphologic manifestations of necrosis to develop. Wilbur and Stevens described a patient who lived for three days after a sunstroke during which the temperature had reached 110° F. Jaundice was present, and there was definite evidence of necrosis in the liver. Malamud, Haymaker, and Custer recently studied the pathology in 125 fatal cases of heat stroke among American troops. They found definite necrosis of the liver in only 12 cases, but all these occurred in patients who had survived for more than 30 hours, whereas the majority had died in less than 24 hours. Jaundice appeared clinically in some of the former group.

Available evidence indicates that liver cells, in addition to certain cells of the nervous system, are particularly susceptible to damage by high fever. (New England J. Med., 20 Nov '47 - J. H. Bragdon)

Early Results in Tantalum Cranioplasty: Experience gained in World War II has shown that the use of tantalum for cranioplasty has appeared to be satisfactory. This material, used extensively for the repair of cranial defects, has the advantages of simplicity of insertion and inertness in the tissue.

There have been few reports concerning the fate of the material following insertion. Woodhall and Cramer in 1945 reported 2 cases of extradural pneumatocele following tantalum cranioplasty due to a fistula between the frontal sinus and the thin connective tissues enclosing the plate. Repair of the fistula and replacement of the tantalum plate effected a good result. It is the purpose of this report to record the results of a survey of Veterans Administration hospitals concerning their experience with tantalum cranioplasties; to point out several indications for the removal of tantalum plates; and to present several cases illustrating this necessity.

Because the majority of tantalum cranioplasties were performed to repair the skull defects resulting from war injuries, it was considered probable that patients with complications of cranioplasty would at some time apply to veterans hospitals for treatment. In April 1947, a survey was made by questionnaire of the veterans hospitals in the United States. A total of 115 replies were received. Of this group, 22 reported experiences with complications of tantalum cranioplasties. A summary of the 22 reports indicated that a total of 49 tantalum plates were removed; three additional plates were removed at the Veterans Hospital, Dearborn, Michigan, where the authors are located. In an additional 7 cases, associated abscesses or collections of exudate under the scalp were treated conservatively by aspiration or drainage, and removal of the plate was not required. The factor common to practically every case in which the plate was removed was the presence of persistent infection, associated in some with a recognizable osteomyelitis involving the bone edge. In 10 of 12 cases in which the time interval was reported, the infection was a delayed reaction occurring from 4 to 22 months after the insertion of the plate.

Of the 52 plates removed, 26, or 50 per cent, had been inserted in the frontal area of the skull. In 18 of these 26 cases, or 35 per cent of the total, the cranial defect involved the frontal sinuses.

The use of tantalum for the repair of cranial defects appears to be a notable advance in the field of neurosurgery. Burke, in 1940, pointed out the desirable properties of tensile strength, malleability, and inertness inherent in the element tantalum. The investigative work of Pudenz in 1943 verified the minimal reaction of the meninges and brain to this element. Fulcher, in 1943, reported the use of tantalum for the repair of skull defects. Following this report many hundreds of such cranioplasties were performed. Since less than 100 plates have been removed in a total of 115 hospitals, the early success of this material is evident. Approximately one third of the plates that were removed communicated with the frontal sinus. In 2 of the authors' patients such communication was present. The possibility of infection following the insertion of plates in this region suggests

that the use of an osteoperiosteal transplant may be to greater advantage in the repair of a defect in this area.

Failure could also be ascribed to the fact that the blood supply to the scalp overlying a large tantalum plate may be poor since the scalp does not rest upon underlying living tissue. Trauma to the poorly nourished scalp has been noted to favor the development of infection. Occasionally, impingement of the distal edge of an ill-fitting plate against the upper eyelid has resulted in necrosis and subsequent development of a fistula, requiring removal of the tantalum. This complication can be obviated by a more accurate pre-form of the plate and firm tantalum screw fixation.

In the authors' experience, when infection of the cranioplasty has occurred, conservative measures of aspiration and instillation of penicillin, and catheter drainage and instillation of penicillin have always failed. Success by this method of treatment has been but temporary. This has also been the experience of others. A continuing recurrence of infection has finally required plate removal. Following this the wound healed immediately. It is of interest that the regeneration of bone was so complete in one patient that a secondary cranioplasty was not necessary. In this patient the defect had been caused by removal of osteomyelitic bone. (J. Neurosurg., Nov. '47 - S. Lane and J. E. Webster)

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The Fate of Endocardial Vegetations Following Penicillin Treatment of Bacterial Endocarditis: The apparent curability of both acute and subacute bacterial endocarditis with penicillin has recently become well established clinically. Several clinics, including that of the authors, have reported on groups of patients in whom such treatment has been followed by the disappearance of all symptoms and signs of the infection and sterilization of the blood for periods now reaching 3 and 1/2 years. Such enduring remissions in a disease that usually ran a fatal course within one year speak convincingly of cure. However, the complete and ultimate proof of cure rests on the demonstration of unequivocally healed and sterile remnants of vegetations in previously treated patients following their death from other causes.

Four such cases at the authors' clinic constituted anatomic proof that the infective component of bacterial endocarditis is eradicable with penicillin. Such pathologic observations, together with the favorable clinical experiences of the past few years, complete the chain of evidence that bacterial endocarditis is curable.

The nature of the healing process in its several stages was well seen in histologic study of the vegetations. A mass of granulation tissue and hyalinized connective tissue, surrounding eosinophilic material and covered by endothelium, as seen in one case, apparently represented an early phase. Also, obviously early was the organizing mass of fibrin, erythrocytes, and leukocytes that composed the vegetation in another case. More advanced organization and the

deposition of calcium salts within the vegetation appeared to indicate a later stage in a third case. In the fourth case, the completely healed lesion was exhibited by a pale, hard, and smoothly endothelialized mass of dense connective tissue and areas of calcification. It is noteworthy that bacteria were neither seen in, nor cultivated from, the depths of any of these lesions, whether healing or healed, proving that vegetations actually become free of bacteria. Furthermore, the character of the healing or healed lesion in these cases resembles that described by Rosenblatt and Loewe in two cases in which penicillin and heparin had been used. The absence of thrombotic accretions on the vegetations implies that anticoagulant medication is not an essential adjunct of therapy.

Focal embolic nephritis was not evident in two cases but was present in the other two; one of the latter was an instance of active mycotic infection, with endocarditis and systemic dissemination, at death.

The fatal outcome in the first case resulted from congestive failure of the heart which developed abruptly and progressed intractably and rapidly in spite of all therapeutic efforts. This result was probably related to the aortic valvular location of the destructive bacterial endocarditic process, with the consequent sudden imposition of undue strain upon a left ventricular muscle that had insufficient opportunity to compensate through hypertrophy. It is interesting that in the two cases of healed bacterial endocarditis studied postmortem and reported by Rosenblatt and Loewe serious destruction of the aortic valves was evident also; both fatalities had been from congestive failure that progressed relentlessly. There are two obvious implications in this observation: (1) in cases of bacterial endocarditis involving the aortic valve, it is essential that effective antibacterial treatment be instituted at the earliest opportunity, particularly in the presence of acute endocardial infection with rapidly destructive organisms such as the staphylococcus; and (2) convalescence in patients with vegetations on the aortic valve should be prolonged, and return to physical activity should be undertaken slowly, under careful observation, and with skillful institution of the usual measures employed in the control of congestive failure. (Am. J. Path., Nov. '47 - A. J. Geiger and S. H. Durlacher)

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Potassium Thiocyanate in Hypertension: Because of conflicting reports on the beneficial effects of potassium thiocyanate in the treatment of essential hypertension, Ruskin and McKinley, working at the University Medical School and the Heart Station of the John Sealy Hospital, Galveston, Texas, undertook a study in which six drugs were administered in various rotations to 68 clinic patients with uncomplicated essential hypertension. The patients were unaware of the nature of the particular drugs administered.

The dosages were as follows: phenobarbital, 32.0 mg. three times daily; glucophylline (methyl-xanthine derivative), 0.3 Gm. three times daily; mannitol hexanitrate, 65.0 mg. three times daily; niacin, 50.0 mg. three times daily; and a placebo (lactose or sodium bicarbonate), 0.3 Gm. three times daily. Periods

of therapy were interspersed with rest or control intervals of from two to four weeks. Potassium thiocyanate was started at 0.2 Gm. three times a day after three blood serum levels were obtained in the fasting state and following a tobacco-free interval of three or more days, as recommended. Serum potassium thiocyanate concentration was determined by a method adapted to the Evelyn colorimeter. In many cases, weekly blood levels reached 20 mg. per cent (to evaluate the drug more thoroughly), and, at times, inadvertently, higher levels. Dosages of potassium thiocyanate necessary to maintain therapeutic blood levels varied from 0.2 to 1.2 Gm. daily, and the drug was continued for three months, as recommended for proper evaluation. The rest interval after thiocyanate therapy was at least a month, or long enough for return to the pretreatment blood level.

Blood pressures were recorded twice weekly between 9 and 10 a.m., in the same arm, by the same observer, and to the nearest 5 mm. of three readings, recording both the fourth and the fifth phases whenever possible. Constant conditions of preliminary rest and medication were observed.

It was found that two kinds of estimates of the effect of the various drugs upon the blood pressure checked closely and disagreed markedly with the usual method of contrasting the blood pressure just before and following the therapeutic agent. One was to compare the range of systolic and diastolic pressures during the control and therapeutic periods. The other was to contrast the medians of the numerous blood pressure readings during medicinal and drugless periods. When, as happened infrequently, the two computations disagreed by 5 mm., the figure closer to the one obtained by the before-and-after method was taken as the correct result.

The results of the study showed the following:

The best symptomatic relief was obtained from the administration of a placebo or niacin. Glucophylline, phenobarbital, and mannitol hexanitrate decreased the complaints of fewer patients and increased the symptoms in more cases than the placebo or niacin. Potassium thiocyanate, on the other hand, maintained or increased patients' complaints in almost one half of the cases, and decreased them in less than one third. Increase of symptoms undoubtedly occurred more frequently at serum thiocyanate levels above 15 mg. per cent, but was also frequent and, at times, perilous at the more commonly accepted "therapeutic" levels.

Hypotensive effects were demonstrable in many cases following the administration of all six drugs, including the placebo. The psychic calming effects of the physician's care and drug administration have been repeatedly emphasized and are again shown in this study. All drugs, including potassium thiocyanate, have been followed in some cases by actual rises in blood pressure or no change. Statistically, it has been possible to demonstrate that the thiocyanate period of therapy, when compared with the placebo therapy interval, showed significant drops in systolic and diastolic blood pressures, probably due to thiocyanate administration. Again, the diastolic pressures, at least, fell

more markedly at serum levels of potassium thiocyanate above rather than below 15 mg. per cent.

Further studies are necessary to elucidate the mode of action of potassium thiocyanate, and to determine with finality whether its hypotensive effects occur at "toxic" or "therapeutic" blood levels. It would seem from this study that its administration is clinically hazardous and unreliable. The occasional marked drop in blood pressure due to potassium thiocyanate may, apart from any toxicity, cause relative cerebral, renal, and myocardial ischemia, and, possibly, other untoward effects in an organism accustomed to a high intra-arterial tension. The role that the inconstant hypotension produced by potassium thiocyanate may play in the prevention of cerebral hemorrhage or of cardiac hypertrophy and failure is not established from present-day data.

Clinical reports of the efficacy of drugs and other methods in the treatment of hypertension must be viewed with scepticism, particularly in the absence of reliable control observations. (Am. Heart J., Nov. '47)

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Symmetric Calcification of the Cerebral Basal Ganglia: John D. Camp of the Mayo Clinic reports that 12 cases of symmetric calcification of the cerebral basal ganglia in which there was definite evidence of parathyroid insufficiency and tetany have been recorded at the Mayo Clinic. In one patient, the calcification followed a thyroidectomy at the age of nineteen years; in the other 11, the disease was of the spontaneous type.

The symptoms in general include the various complications of chronic parathyroid insufficiency, namely, cataracts, convulsions, mental retardation, and trophic changes. In 3 cases tetany followed an attack of measles. Two of these patients were sisters, and the mother made the diagnosis of parathyroid insufficiency in the younger one because the symptoms were similar to those previously observed and diagnosed in the other. In one case, in a girl two and a half years of age, the diagnosis of parathyroid tetany was made at the clinic in 1925. The values for the serum calcium as determined on two occasions at that time were 7.4 mg. and 8.4 mg. per 100 c.c. Roentgenographic examination of the skull was reported as negative. The patient had no attacks for one month following treatment and at that time was taken home. Nothing further was heard of her until 1935 when she was brought back to the clinic because of her mental condition. Because the child did not like the medication, it had been discontinued soon after her return home in 1925. In 1935 she was markedly retarded both mentally and physically, and convulsions were occurring frequently. The values for the serum calcium on two occasions were 6.4 mg. and 6.0 mg. per 100 c.c. The value for serum phosphorus was 7.2 mg. per 100 c.c. Roentgenograms of the skull revealed symmetric calcification of the cerebral basal ganglia. Because of her condition, the parents sent the child to a mental hospital for permanent care. It is interesting to speculate on how different the outcome might have been if the originally prescribed medication had been continued. It is

significant that in none of the 12 cases did a convulsion or "attack" occur after the institution of treatment for parathyroid insufficiency. Mental improvement was marked, and children previously retarded in school were able to keep up with their classmates, and some have subsequently gone to college. These facts alone and the possibility of salvaging even a few of the mentally retarded and handicapped will justify the search for parathyroid insufficiency in the presence of roentgenographic evidence of symmetric calcification of the cerebral basal ganglia.

It is evident from this study that paratnyroid insufficiency is only one of several diseases producing a disturbance of cerebral metabolism which results in the deposition of colloid material in and about the finer cerebral vessels with subsequent calcification. The basal ganglia and dentate nucleus have long been recognized by pathologists as common sites of predilection for the process. Because of the rarity of spontaneous parathyroid insufficiency and the study of 11 such cases in which symmetric calcification of the cerebral basal ganglia was observed, it is believed that the association of the two conditions should be emphasized. It is possible that in some cases of marked cerebral calcification associated with mental deterioration and convulsive seizures reported in the literature, a parathyroid insufficiency which was not detected may have been present. For this reason, all patients with chronic parathyroid insufficiency should have a roentgen examination of the skull. In addition, a determination of the concentration of serum calcium should be made to establish or exclude parathyroid insufficiency in all cases in which roentgenograms show symmetric calcification of the cerebral basal ganglia. (Radiology, Nov. '47)

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Intracellular Mode of Action of the Sulfonamides: O'Meara et al. of the School of Pathology, Trinity College, Dublin, have been carrying on studies on the mode of action of the sulfonamides. The following material is from the summary and conclusions of their report in the Lancet for 22 November 1947:

The sulfonamide derivatives act on bacteria by affecting the metabolism in their logarithmic phase of growth. Bacteria causing septicemia are in the logarithmic phase.

In this phase bacterial metabolism is at its height, and many highly reactive metabolites are produced in the cell and its environment. One such metabolite is a dienol compound, probably glucoreductone, which is unstable and highly reactive but unites readily with p-aminobenzoic acid to form a compound which is stable and nonreactive. This compound undergoes hydrolysis readily, liberating glucoreductone and p-aminobenzoic acid.

It is therefore suggested that p-aminobenzoic acid is a stabilizing agent for glucoreductone in bacterial metabolism. It enables the cell to store glucoreductone as it is formed and to utilize it as required. It thus prevents the loss of an essential intermediate metabolite during growth and safeguards the cell from the toxic effects of so reactive a substance.

Glucoreductone may represent only one type of metabolite stabilized in this way, since other reactive substances, particularly other aldehydes and ketones, would be capable of condensing similarly with p-aminobenzoic acid.

That glucoreductone is important for growth of bacteria has been shown by finding that the compound formed by glucoreductone p-aminobenzoic-acid condensation is capable of being utilized by streptococci as a source of energy for growth.

The sulfonamides condense almost as readily as p-aminobenzoic acid with glucoreductone. The condensation products with sulfapyridine and sulfathiazole are less soluble and less readily hydrolyzed than that with p-aminobenzoic acid. The condensation product with sulfanilamide is more soluble. The chemotherapeutic activity of the sulfonamides and their susceptibility to the inhibitory action of p-aminobenzoic acid run parallel with the stability of the compounds which they form with glucoreductone. The condensation products of glucoreductone with sulfapyridine or with sulfathiazole cannot be utilized by streptococci as a source of energy for growth.

It is therefore contended that the sulfonamides act within the bacterial cell during active metabolism (such as is encountered during growth) by replacing p-aminobenzoic acid and combining with glucoreductone (and possibly other reactive metabolites) and preventing it from becoming available for the use of the cell. Such a deprivation during active growth is likely to be fatal, because the entire metabolism of the cell will be suddenly arrested at the point when it has become adjusted for the special purpose of reproduction. In support of this view it has been shown that growing bacteria assimilate p-aminobenzoic acid and sulfonamides added to their environment.

This view of the mode of intracellular action of the sulfonamide derivatives is compatible both with their known relationship to p-aminobenzoic acid and sulfonamides added to their environment.

This view of the mode of intracellular action of the sulfonamide derivatives is compatible both with their known relationship to p-aminobenzoic acid and the observations which show that their activity is enhanced by oxygen.

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Blood Pressure Readings of 75,258 University Students: The purpose of this report is to present data on blood pressure determinations on a large number of persons, most of whom are young adults.

The material for this study was obtained from the records of physical examinations made at the Students' Health Service at the University of Minnesota from 1930 through 1942. During this twelve-year period, 75,258 persons were examined, of whom 43,800 were men and 31,458 were women. With the exception of a few faculty members, the group was comprised of university students.

The blood pressure readings were made with a mercury manometer by the auscultatory method, with the student in a sitting position. In general, the diastolic reading was taken at the point at which the tone changed, although it is not certain that all examiners throughout the twelve-year period conformed to this method.

The mean age for the men was 21.51 years, with a range from 16 to 70 years. The majority was between 17 and 26 years of age. For the women, the mean age was 21.06 years, with a range from 16 to 66 years, and the majority was between 17 and 23.

The mean systolic blood pressure for men of all ages included in this study was 122 mm., and for women, 111 mm. In every age group except the group over the age of 40 the mean systolic pressure in men exceeded that in women. The sex differences in mean systolic blood pressure are statistically significant in each age group except the group 41 years and over. In women there is a slight, but definite, upward trend of the mean systolic blood pressure with age. This tendency to increase with age is not seen in the mean systolic pressures of men. The range in systolic pressure in men was from 60 to 229 mm., and in women, from 60 to 239 mm.

The mean diastolic pressure in men of all ages was 74.5 mm., and in women 69.7 mm. At each age the mean diastolic pressure was higher in men than in women. In both men and women there was a tendency for the mean diastolic pressure to increase with age. The range of diastolic blood pressure was from 0 to 129 mm. in men, and from 10 to 139 mm. in women. (Arch. Int. Med., Oct. '47 - R. E. Boynton and R. L. Todd)

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Roentgenographic Signs of Altered Alimentary Function Following Blockade of the Autonomic Nervous System with Tetraethylammonium: Tetraethylammonium is a simple organic compound which possesses a recently recognized property that is unique among known pharmaceutical agents. Parenterally administered, the drug appears to block the transmission of impulses through the autonomic ganglia - both sympathetic and parasympathetic.

Clinical experimentation showed that parenteral administration of tetraethylammonium produced postural hypotension, increase in skin temperature and blood flow in the extremities, elevation of the cardiac rate, cessation of sweating, dry mouth, fixation of the pupils in mid-dilatation, loss of ocular accommodation, and inability to void. Certain hypertensive subjects showed a significant drop in both systolic and diastolic blood pressure, and in the case of one such patient who also had a duodenal ulcer, the ulcer pain stopped completely during the period of activity of the drug. Additional investigation of this patient showed that gastric secretion was markedly decreased by the drug, but that the pain disappeared long before the stomach emptied itself of secretions already present. This finding would seem to support the concept that peptic ulcer pain is caused primarily by

smooth muscle spasm, and not by the mere presence of acid in the stomach or duodenal bulb.

Administration of tetraethylammonium also has been found to relieve the pain and to increase the skin temperature in various peripheral vascular diseases associated with vasoconstriction. The ability of the drug to relieve vasospasm has also made it a useful diagnostic tool in assaying sympathetic tone in candidates for lumbar sympathectomy. It appears to be of limited value in the symptomatic treatment of hypertension.

As roentgenographic methods offer the most rational means of detecting altered physiologic function in the alimentary canal of man, this approach was employed in a study of the effects of tetraethylammonium on the esophagus, stomach, small intestine, and colon. Preliminary observations indicated that the drug produces diminution of gastro-intestinal tone and causes virtually complete cessation of motility in the small bowel. In many instances, movements of the small intestinal mucosal folds are completely stopped for relatively long periods of time. This is in contradistinction to the action of atropine and adrenalin, both of which produce some decrease in motility but neither of which has any appreciable effect on mucosal movements.

Artificial paralysis of autonomic ganglia does not consistently produce all of the classical roentgenographic features of "disordered motor function" of the small intestine as seen in various nutritional disorders, gastro-intestinal allergy, diabetic neuropathy, and other conditions. (Radiology, Nov. '47 - J. F. Holt et al.)

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Bagasse Disease of the Lungs: The residue of sugar cane after it has been crushed and the juice extracted is termed bagasse. Bagasse disease of the lungs, or bagassosis, is a pulmonary disorder brought about by the inhalation of dried bagasse dust. Only from 30 to 40 cases of the disease have been reported in the literature and most of them occurred in men who handled bagasse derived from sugar cane grown in Louisiana where the disease has occurred only in certain of the communities. Bagassosis also occurs in men employed in the Cuban sugar industry and in cities where the bagasse is manufactured into building boards, as in England, or where it is used in making refractory brick, as in Missouri. The authors found no reports of its occurrence in the Hawaiian Islands.

In general, about two months of exposure to the dust are required before symptoms appear, although the time has varied from three weeks to two years. The disease manifests itself as an acute febrile illness with extreme shortness of breath, a persistent cough with scanty mucoid sputum, and a profound weakness. The onset is insidious and gradual, for these patients usually do not realize that they are ill until they are seized by a sudden coughing spell and become so dyspneic as to force them to rest. The dyspnea is extreme. One patient required oxygen for nearly two months. He was also cyanotic, but usually cyanosis appears in only the most severe cases. The usual appearance is that of a patient with a severe bronchiolitis and pneumonia.

Patients with long exposures to heavy concentrations of the dust are critically ill. At the onset the fever may range from 37° to 39° or 40° C. and persist for as long as from two to three months before gradually subsiding. The pulse rate is correspondingly elevated. The respiratory rate is increased, ranging from 20 to 40. Moist crepitant rales are heard throughout both lungs. The blood white cell counts range from 10,000 to 20,000. Repeated studies of the sputum for fungi and abnormal cells have been negative. Small highly refractile bodies which might have been bagasse particles were observed.

Radiographic findings in bagasse disease of the lungs are largely dependent on the duration of exposure to and the concentration of the bagasse dust. In patients who receive a prolonged exposure to heavy concentrations of the dust an extensive fine punctate infiltration develops throughout both lungs. The punctate type of infiltration tends toward a nodular appearance as the disease begins to clear up. In the beginning, the infiltration is so dense that areas of consolidation develop, usually about the hilum and/or in the adjacent portions of the lungs. The infiltration pattern is not sufficiently characteristic to enable one to make a diagnosis of bagassosis by merely examining the film. In this disease one must follow the old dictum: "There can be no radiographic diagnosis of bagasse disease of the lungs without a history of exposure to bagasse dust."

The one remarkable radiographic feature of this disease is that the process of pulmonary infiltration, as observed on the roentgenogram, is a reversible one. This characteristic distinguishes bagassosis from the other pneumoconioses, in which a permanent fibrosis of the lung develops.

Pathological material from the lungs, in the only two deaths from bagassosis reported, showed a fibroblastic reaction of the interstitial tissue with small needle-like spicules of an irregular foreign material embedded in the pulmonary tissue. The spicules were not numerous and averaged 2 x 8 microns. When examined under the polarizing microscope, they rotated the plane of the polarized light and, microscopically, appeared similar to particles of bagasse. The alveolar cells were more numerous, were very large, possessed a "foamy" cytoplasm, and in some areas filled the alveolar spaces.

It has not yet been determined whether or not the pathologic reaction is due to fungi, bacteria, or a virus associated with the dust, or to an allergic response to the bagasse, or to some chemical or physical property of the dust, or any combination of the above.

There is no specific treatment. There was no notable response in those in whom the sulfa drugs were tried or in one patient given penicillin. Oxygen has afforded some relief of the dyspnea in the more serious cases. (Radiology, Nov. '47 - D. V. Lemone et al.)

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Medical Surveys Recommending Appearance of Officers of Navy and Marine Corps Before Retirement Board: The data included in this study are based upon the NavMed M (Report of Board of Medical Survey), and have not been adjusted for late reporting.

During the calendar year 1946 boards of medical survey made recommendations for 2,527 officers of the Navy and Marine Corps to appear before a retirement board. Of these 2,527 officers, the great majority, 95.0 per cent, incurred the condition for which surveyed in line of duty. In 2.6 per cent the condition had existed prior to the individual's entry into the service but was aggravated by service, and in 1.7 per cent the condition had existed prior to entry but was not aggravated by service. Among the remaining 0.7 per cent the source of the condition was unknown.

In data on the length of active duty of the officers surveyed, it was noted that the largest group, for both Naval and Marine Corps officers, representing more than 45 per cent, constituted those with less than 6 years of active duty. For Naval officers, the next largest group included those individuals with from 26 to 30 years of active duty, but for the Marine Corps officers, the next largest group had only from 6 to 10 years of service. It is interesting to observe that in the groups with less than 30 years of service, the smallest percentage of surveys was among those persons who had had between 11 and 15 years of active duty.

Class II (Diseases of Circulatory System) is outstanding in accounting for the highest percentage of surveys, 23.9 per cent of the total. Class XVI (Diseases of Motor System) ranks second, with 11.5 per cent of the total. It is in Class XXI (Miscellaneous Diseases), which ranks third, that the various sequelae of combat injuries are included.

It was noted that the highest percentage of surveys, 14.8 per cent, is in the age group of from 25 to 29 years of age, with the next highest percentage (possibly paralleling the high percentage of surveys in the group with from 26 to 30 years of active duty) occurring in the group from 50 to 54 years of age.

For tuberculosis and diabetes, separate distributions of the surveys by age group were compiled. For tuberculosis the highest percentage of surveys is in the younger age groups, those of from 25 to 29 years of age and from 30 to 34 years of age. These 2 groups combined comprise 46.1 per cent of the surveys for tuberculosis. For diabetes, as might be expected, the highest percentages occurred in the older age groups, those of from 45 to 49 years and from 50 to 54 years.

It is interesting to observe that in the category of medical reasons for survey in the cases of these 2,527 officers, arthritis ranks as the leading cause. Acquired deformity ranks second, with hypertension ranking third, and tuberculosis ranking fourth in importance. (Statistics of Navy Med., Dec. '47)

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Abdominal Diseases and Injuries Requiring Surgery: The various abdominal conditions for which surgery may be required constitute an important group. In the Navy, several of the abdominal conditions rank high among the leading causes of morbidity, sick days, invalidings from the Service, and mortality. Data have been compiled from the Fa card (Individual Statistical Report of Patient) for the years from 1942 through 1945 on the incidence, sick days, invalidings from the Service, and deaths for abdominal conditions which may require surgery among Navy and Marine Corps personnel.

The average annual incidence rate for the abdominal injuries is exceedingly low when compared to the incidence rate for the diseases, 22.4 per 100,000 strength as against 1,687.2. On the other hand, the fatality rate for injuries, 119.8 per 1,000 cases, is far higher than the rate of 3.4 reported for diseases.

A breakdown of these abdominal diseases and injuries (other than those incurred by enemy action) for the World War II period is shown in the table on the opposite page. Of the abdominal diseases, appendicitis (acute and chronic) is the most common ailment, accounting for 58.4 per cent of the incidence of the abdominal diseases. The acute form accounted for 86.3 per cent of the total incidence and for 127 of the 131 deaths. The second highest incidence rate is attributable to hernia and enlarged inguinal ring, 622.1 per 100,000 strength. The most common hernia is the indirect inguinal type which accounted for 74.9 per cent of the incidence, 72.5 per cent of the sick days, and 58.2 per cent of the invalidings from the Service for all the hernias. Together, appendicitis and hernias accounted for 91.6 per cent of all the sick days for abdominal diseases.

Among the diseases and conditions of the liver and bile ducts, chronic cholecystitis is the most outstanding, accounting for 59.1 per cent of the incidence and 63.7 per cent of the invalidings from the Service for this group of diseases. Cholelithiasis ranks second in both respects, accounting for 35.4 per cent of the incidence and 32.9 per cent of the invalidings from the Service. The highest fatality rate, however, 44.1 per 1,000 cases, may be attributed to amebic abscess of the liver which is also responsible for the highest average number of sick days per case, 111, as compared to 53 for cholecystitis and 62 for cholelithiasis.

Of the intestinal obstructions, external causes accounted for 55.8 per cent of the incidence and for 64.7 per cent of the 68 deaths due to this group. Although the majority of the deaths were due to obstructions from external causes, the annual death rate for the obstructions due to spastic and paralytic causes is also notable, 87.0 per 1,000 cases, as compared to a rate of 54.0 per 1,000 cases for deaths due to external causes.

The case fatality rates for malignant abdominal tumors were high. Although the nonmalignant tumors of the abdomen outranked the malignant tumors in incidence by 2 to 1, death resulted from only 0.6 per cent as compared to 48.1 per

ABDOMINAL DISEASES AND INJURIES REQUIRING SURGERY,
NAVY AND MARINE CORPS, 1942 - 1945

DIAGNOSIS	INCIDENCE		INVALIDINGS FROM THE SERVICE		DEATHS		SICK DAYS	
	Number	Average annual rate per 100,000	Number	Annual rate per 1000 cases	Number	Annual rate per 1000 cases	Number	Average per case
Grand Total	170,390	1,709.6	2,328	13.7	841	4.9	5,043,068	29.6
Total abdominal diseases	168,153	1,687.2	2,292	13.6	573	3.4	4,979,846	29.6
Total abdominal injuries	2,237	22.4	36	16.1	268	119.8	63,222	28.3
ABDOMINAL DISEASES								
Appendicitis, acute and chronic	98,224	985.5	61	0.6	131	1.3	2,046,973	20.8
Hernia (and enlarged inguinal ring)	62,006	622.1	1,498	24.2	15	0.2	2,515,263	40.6
Diseases and conditions of liver and bile ducts	2,819	28.3	237	84.1	13	4.6	162,966	57.8
Obstruction, intestinal	1,460	14.6	92	63.0	68	46.6	55,540	38.0
Peritonitis	1,185	11.9	35	29.6	132	111.6	41,992	35.5
Peptic ulcer, perforated	1,002	10.1	238	237.5	33	32.9	68,283	68.1
Diverticulosis, intestinal and Mikulicz's disease	168	1.7	29	172.6	-	0	7,811	46.5
Fistula, fecal	148	1.5	5	33.8	2	13.5	12,002	81.1
Fistula, abdominal organs	70	0.7	4	57.1	-	0	5,211	74.4
Tuberculosis, peritoneum	29	0.3	15	517.2	8	275.9	3,906	134.7
Abdominal tumors, malignant	347	3.5	61	175.8	167	481.3	40,042	115.4
Adenocarcinoma	53	0.5	15	283.0	30	566.0	6,441	121.5
Carcinoma	190	1.9	28	147.4	101	531.6	23,351	122.9
Lymphoma	15	0.2	4	266.7	1	66.7	896	59.7
Lymphosarcoma	32	0.3	5	156.3	14	437.5	3,123	97.6
Melanoma	12	0.1	1	83.3	1	83.3	803	66.9
Sarcoma	30	0.3	7	233.3	14	466.7	3,918	130.6
Tumor, mixed, malignant	6	0.1	1	166.9	1	166.7	675	112.5
Tumor, malignant, other	9	0.1	-	0	5	555.6	835	92.8
Abdominal tumors, nonmalignant	697	7.0	17	24.4	4	5.7	19,857	28.5
Adenoma	15	0.2	-	0	1	66.7	446	29.7
Cyst, retention	93	0.9	-	0	-	0	1,506	16.2
Cyst, not elsewhere classified	163	1.6	5	30.7	1	6.1	5,730	35.2
Fibroma	48	0.5	1	20.8	-	0	1,163	24.2
Lipoma	266	2.7	1	3.8	-	0	6,097	22.9
Neuroma	36	0.4	1	27.8	-	0	988	27.4
Papilloma	24	0.2	-	0	-	0	450	18.8
Tumor, mixed, benign	20	0.2	-	0	1	50.0	822	41.1
Tumor, mixed, activity unknown	24	0.2	8	333.3	1	41.7	1,914	79.8
Tumor, nonmalignant, other	8	0.1	1	125.0	1	125.0	741	92.6
INJURIES								
Wound, gunshot	411	4.1	14	34.1	153	372.3	15,956	38.8
Rupture, traumatic	298	3.0	8	26.8	46	154.4	12,248	41.1
Wound, punctured	274	2.7	1	3.6	15	54.7	5,641	20.6
Hernia, traumatic	263	2.6	3	11.4	-	0	9,916	37.7
Hematoma, traumatic	203	2.0	2	9.9	1	4.9	3,039	15.0
Wound, lacerated	198	2.0	2	10.1	2	10.1	3,830	19.3
Foreign body, traumatic	158	1.6	5	31.6	-	0	3,001	19.0
Wound, incised	126	1.3	-	0	7	55.6	2,014	16.0
Wound, infected	114	1.1	-	0	-	0	3,274	28.7
Wound, fragment	80	0.8	1	12.5	19	237.5	2,460	30.8
Hemorrhage, traumatic	80	0.8	-	0	14	175.0	1,260	15.8
Crush, abdominal organ or part	32	0.3	-	0	11	343.8	583	18.2

cent for malignant tumors. Similarly, only 2.4 per cent of the nonmalignant tumors caused invaliding from the Service as compared to 17.6 per cent for the malignant tumors.

Of the malignant abdominal tumors, carcinomas accounted for 54.8 per cent of the incidence and for 60.1 per cent (101) of the deaths. The most frequent locations for abdominal cancers were the colon and the stomach, (rectal diseases are not included in this study). Of the 102 cases of malignant tumors affecting the colon, 98 were reported as carcinomas (of which 33 were listed as adenocarcinomas). Of the 90 cases in which the stomach was involved, 79 were reported as carcinomas (of which 7 were recorded as adenocarcinomas) and 6 as sarcomas.

The case fatality rates by location reveal that cancer of the pancreas has the highest fatality rate, 900.0 per 1,000 cases, closely followed by a fatality rate of 846.2 per 1,000 cases for cancer of the liver, and 750.0 for cancer of the cecum. The malignant abdominal tumors are also notable in relation to the number of sick days per case. Concerning location, the highest number of sick days per case, 209.1, was due to cancer of the cecum, with cancer of the peritoneum and the colon ranking next.

The largest percentage of the injuries was for "other and multiple abdominal parts." This category includes injuries of the abdominal region in general and also injuries of multiple parts of the abdomen. Of the injuries, the highest fatality rate resulted from damage to the pancreas. (Statistics of Navy Med., Dec. '47)

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Incidence of Yaws in the Caroline Islands: From a Military Government Unit report for the quarter ending 30 June 1947, data on the incidence of yaws among certain islands of the Caroline group have been obtained. Although the report of the survey makes no mention of the criteria upon which the diagnoses were made, it has been assumed that they were based upon clinical signs and symptoms, thus presenting a reasonably accurate picture of the incidence of yaws among these islands.

The survey included 24 islands. Out of a total population of 5,850, 5,388 persons were examined. Among these, 390 cases of yaws were discovered, constituting an over-all percentage of 7.2. For individual islands, however, the incidence varied widely, the lowest percentage of cases, 0.5 per cent, being on the island of Nukuoro, and the highest percentage, 34.0, on Pulusuk. (Statistics of Navy Med., Dec. '47)

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A Study of the Protective Effect of Starch Against the Hemorrhagic-Kidney Syndrome of Choline Deficiency: In studies carried out between 1939 and 1941. Griffith, Wade, and Mulford observed that a dramatic series of events took place in young rats from 6 to 8 days after they were placed on diets deficient in choline. Necrosis, congestion, and sometimes hemorrhages involving the cortical portions of the kidneys occurred, producing swollen, tense, "hemorrhagic" kidneys. Hemorrhages also occurred less frequently in the eyes, and occasionally in other organs. The syndrome was fatal in a large percentage of the animals, presumably due principally to the renal insufficiency which ensued. However, the animals which survived the critical period of from 2 to 4 days after onset of illness showed rapid recovery, even on the same deficient diet, and the hemorrhagic appearance of the kidneys disappeared entirely within a few days in spite of the progression of fatty changes in the livers. The syndrome occurred most constantly in male animals under 30 days of age. The addition of choline to the diet completely prevented the syndrome. Methionine and betaine were also effective in its prevention. It was presumed that this preventive action occurred through the utilization of methyl groups of these substances in the synthesis of choline by the process of transmethylation described by du Vigneaud et al. Various vitamin B factors, and vitamins K, C, and P were ineffective against the lesions produced. The syndrome could be prevented by limitation of the food intake. Increasing the casein level of the diet to about 25 per cent increased the incidence, perhaps due to the more rapid growth, but above this level there was a rapid decline in incidence, supposedly due to the increased amount of methionine (above that required as methionine and cystine) available for choline synthesis. Cystine, cholesterol, and fat increased the lesions.

During the course of an investigation of the liver and kidney injury produced in rats by diets containing pyridine, carried out by the author, it seemed desirable to use a diet low in choline and methionine but not so low that pathological changes would result during the experimental period from the diet alone. Diets containing from 10 to 18 per cent casein, with yeast, cod liver oil, corn starch, sucrose, lard and salt mixture, but without added choline, were used and apparently were satisfactory. On these diets young rats somewhat above the most susceptible age were never observed to develop hemorrhagic kidneys. Later, however, when the starch was replaced by sucrose, some of the animals did develop hemorrhagic kidneys.

In the present study, the effects of sucrose and corn starch were compared in more highly purified diets than those used in the pyridine experiments, and when the incidence of illness and death due to the hemorrhagic-kidney syndrome in young rats on a choline deficient diet was found to be significantly lower, efforts were made to determine the mechanism of this effect.

This effect of the starch was more than that produced by the addition to the sucrose diet, of more choline than was contained by the starch. Addition of increments of choline resulted in more rapid growth and a later appearance of

hemorrhagic kidneys before there was a significant decrease in the incidence of the syndrome.

Residues from extracts of the starch did not afford protection when added to the sucrose diet, and extracted starch was at least as effective as unextracted starch.

Addition of 2 per cent succinylsulfathiazole to the starch-containing diet did not diminish the protective action of the starch. Moreover, significant amounts of choline were not found in the feces of rats kept on the choline-free diets. The cecums of the animals receiving succinylsulfathiazole became markedly dilated.

In spite of the failure to obtain evidence of an increased bacterial synthesis of choline in rats on the starch-containing diet, some effect within the intestinal tract appeared to be the most probable explanation of the protection afforded by starch. However, the possibility of other protective factors in the starch was not entirely eliminated. (J. Nutrition, 10 Sep '47 - J. H. Baxter)

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Action of Soap on the Skin: In the manufacture of soap, fats are chosen which contain either lauric acid or oleic and other unsaturated fatty acids in order that the final soap have satisfactory lathering, cleansing, and physical properties. The fatty acid fraction of an average toilet soap usually contains from 11 to 12 per cent lauric acid and from 38 to 40 per cent oleic acid and other acids of one double bond. A satisfactory soap may be prepared which has more lauric and less oleic acid, such as coconut oil soap, or one which has less lauric and more oleic acid, such as olive oil soap. Gardiner and Goldman have stated that coconut oil soaps are more irritating to the skin than other soaps, and this is not an uncommon clinical observation. Soaps made from only olive oil have been thought to be relatively nonirritating to the skin. There has been little or no opportunity to observe the action on the skin of a soap containing neither lauric nor oleic acid, since a soap so prepared is relatively insoluble in water and has poor cleansing properties. This paper will present data on the action on the skin of a detergent which contains little or no lauric or oleic acid.

In the first paper of this series the results of patch tests with the single fatty acids were reported. Among those fatty acids present in soap in any appreciable amount, lauric acid elicited the highest percentage of positive reactions to patch tests. Oleic acid elicited only a few positive reactions. During the past five years patch tests with the fatty acids on a large series of patients with recurrent vesicular dermatitis of the hands have confirmed these earlier observations.

In the second paper of this series it was shown that fatty acids are more irritating when they are held on an area of skin of which the surface pH is

increased by the frequent addition of a buffer solution. This is probably the equivalent of converting some of the fatty acid to a soap. At the time that the study was written up, the hypothesis was stated that although fatty acids of low molecular weight, such as lauric acid, are irritating to the skin at a low pH, the acids of high molecular weight, such as stearic acid, would become irritating only if the cutaneous surface with which the fatty acid is in contact were maintained either at a relatively high pH or possibly at not so high a pH for a longer period of time. The work of other investigators and that of the authors reported in this paper support this hypothesis.

A patch test with a sodium soap of a fatty acid is somewhat the equivalent of a patch test with a fatty acid at an elevated pH, since the soaps are, of course, more alkaline than the fatty acids themselves. Emery and Edwards have shown that among the sodium soaps of the saturated fatty acids, sodium laurate gives the highest percentage of positive reactions to patch tests. They also showed that the sodium soap of oleic acid, an unsaturated acid, elicited more positive reactions to patch tests than the sodium soap of stearic acid, the corresponding C_{18} saturated fatty acid.

The results of comparable patch tests with the sodium soaps of the chemically pure fatty acids on over 300 patients with recurrent vesicular dermatitis of the hands have been observed by the authors and are tabulated below. The

Soap	Negative	Mild Erythema	Definite Erythema	Papule	Vesicle	Total
Sodium laurate	14	58	126	125	20	343
Sodium myristate	40	125	146	6	0	327
Sodium palmitate	145	155	40	1	0	341
Sodium stearate	288	54	2	0	0	344
Sodium oleate	46	108	139	15	0	308

authors chose to try to differentiate between mild and definite erythema, since they believe that mild erythema may result from the friction of the cloth square alone and, therefore, it should not necessarily be interpreted as a positive reaction to the soap. It is at once evident that among the soaps of the saturated fatty acids, lauric, myristic, palmitic, and stearic, the number of significantly positive reactions to patch tests decreases as the molecular weight of the fatty acid increases (from lauric to stearic). This cannot be caused by a high pH of the soaps of low molecular weight, since the pH of the soap increases with increases in the molecular weight of the soap. It is also seen from the table that there are many more positive reactions to patch tests with the soap of unsaturated oleic acid than with the soap of the corresponding saturated stearic acid.

These results confirm the work of Emery and Edwards, who used a different technic for making the patch tests. These results also suggest that even though an olive oil soap (high in sodium oleate) would be less irritating than a coconut oil soap (high in sodium laurate), neither soap would be as nonirritating as one made primarily from sodium palmitate and sodium stearate.

In the second paper of this series, a technic of testing employing a window patch was described for holding a fatty acid in contact with the skin in the

presence of buffer solutions of varying pH. With this technic, using the four saturated fatty acids (lauric, myristic, palmitic and stearic), it was shown that the lauric acid usually elicits an intense erythematous or papular reaction, the myristic acid a less intense erythema, the palmitic acid usually a negative reaction but occasionally a mild erythema, and the stearic acid almost always a negative reaction.

Thus, it is apparent that even though a fatty acid of low molecular weight, such as lauric, may be irritating to the skin at a pH of 7 or lower, the fatty acids of higher molecular weight (palmitic and stearic) will probably not irritate the skin even at a pH as high as 9. Yet, a cake of soap made from palmitic and stearic acid (this mixture is commercially called triple-pressed stearic acid) at a pH of 9 would be an unsatisfactory detergent. It would be hard, would not lather and would clean poorly. If, however, a nonirritating cleansing agent could be added to such a base, a satisfactory detergent might result.

Oleic acid may be sulfated to various degrees. A series of patch tests with low sulfated oleic acid (9 per cent organic sulfur trioxide) and high sulfated oleic acid (16 per cent organic sulfur trioxide) showed that the higher sulfated material was less irritating to the skin than the low sulfated acid. In a further investigation the low sulfated acid was fractionated into a high sulfated fraction and an unsulfated fraction. Patch tests with these two fractions again showed the high sulfated oleic acid to be nonirritating, but the unsulfated fraction showed many positive reactions to patch tests. Thus, it seemed apparent that if oleic acid could be sulfated so as to convert it almost entirely to the sulfato-octadecanoic acid it would be nonirritating to the skin and possibly would produce a satisfactory detergent when used in conjunction with palmitic and stearic acids.

Such a detergent has now been produced. It contains primarily palmitic, stearic, and the sulfato-octadecanoic acids adjusted to a pH of 8.5 plus or minus 0.1. It contains no lauric acid and only a small amount of myristic acid (usually less than 5 per cent of the fatty acid fraction). Because the material has received a high sulfation, the amount of residual unsulfated oleic acid is negligible. This detergent has been under clinical investigation for the past three years.

Patch tests with a small piece of this detergent on 211 persons elicited 171 negative reactions, 33 reactions of mild erythema, 6 reactions of definite erythema and only 1 papular reaction. The reaction to a patch test with an average toilet soap with this technic is rarely negative; it is usually definitely erythematous. A patch test with 2 c.c. of an 8-percent solution of this detergent, according to the technic recommended by Kooyman and Snyder, almost never elicited even the mild erythema or wrinkling of the skin not uncommonly resulting with an average toilet soap in tests with this same method.

Clinical investigation of this detergent has been limited primarily to its use by over 200 patients with recurrent vesicular dermatitis of the hands. A regular soap is usually thought to aggravate this type of dermatitis. These patients have used the detergent as a general cleanser for all personal hygiene. They have

been asked to avoid the use of other soaps while using this detergent. Other types of treatment, such as with boric acid soaks and mild ointments, usually accompanied this change in detergents.

In no instance has there been seen an exacerbation of the dermatitis which could be interpreted as an irritation or acquired hypersensitivity to the detergent. Almost all the patients found it a satisfactory cleanser. Some patients reported that this detergent caused more smarting than regular soap, and others reported less smarting. There has been no consistent impression concerning whether the use of this detergent seems to leave the skin "drier" or "oilier." Until a more satisfactory method for the objective evaluation of "oiliness" of the skin is developed, the patients' impressions for such an evaluation must be used as criteria and these impressions are not always reliable. Clinical investigations of the use of this detergent for various cutaneous diseases are being continued by the authors and other dermatologists. (Arch. Dermat. and Syph., Oct. '47 - C. G. Lane and I. H. Blank)

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Two Simultaneous Cases of Leprosy Developing in Tattoos: Two men from the same community, while serving in the United States Marine Corps, were tattooed by the same artist on the same day in June, 1943, at Melbourne, Australia. They both developed maculo-anesthetic or tuberculoid leprosy in their tattoos during the first half of 1946. One man had multiple tattoos but developed leprosy only in the tattoo made in Melbourne the day when his friend was tattooed. A third Marine, tattooed at the same place but not on the same day, has shown no evidence of leprosy. These two cases provide strong evidence for the spread of leprosy by inoculation. (Am. J. Path., Sept. '47 - R. J. Porritt and R. E. Olsen)

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Study in Experimental Hyperthyroidism of Antithyrotoxic Nutritional Factor: The importance of nutrition in experimental hyperthyroidism and its effect on the course of the syndrome have been emphasized by many investigators. The vitamin requirements of animals with hyperthyroidism appear to be increased.

The present investigation was undertaken to determine the nature of the growth-stimulating, antithyrotoxic agent in yeast and other sources. It was designed to show whether this effect was due to one of the known members of the vitamin-B complex or whether an as yet unknown factor was responsible.

Male, weanling albino rats of the Sprague-Dawley strain were used. In four experiments different materials thought to contain antithyrotoxic properties were used to supplement the ration of the experimental rats which all received dessicated thyroid. In all experiments both negative and positive control rats were included. The negative controls received only the purified ration and dessicated thyroid; the positive controls received only the purified ration. A 4-week growth period was used in studying the antithyrotoxic properties of a material.

The presence in yeast of an antithyrotoxic factor, which has been previously reported, has been confirmed in these studies. However, liver has been found to be a better source of the antithyrotoxic material than yeast. It was clearly indicated that there is present in liver a factor(s) which is essential for the growth of rats suffering from experimentally induced hyperthyroidism. When the ration contained all known members of the vitamin-B complex, at levels much higher than accepted adequate levels, thyrotoxicity was severe; also, further addition of calcium pantothenate and inositol gave no protection, whereas the various liver preparations exerted antithyrotoxic effects. In other experiments, not described in this paper, doubling the level of crystalline vitamins added to the ration used in this study had no noticeable effect on growth and survival of rats.

It may be that thyroid feeding increases the requirement of the growing animal for some as yet unknown factor(s) which the animal ordinarily obtains in adequate quantities through tissue or intestinal synthesis. Another possibility which must be considered is that thyroid feeding results in decreased synthesis of some factor(s) essential for growth. Still a third alternative is that liver and yeast contain a substance which directly antagonizes the action of the thyroid hormone. Further work is necessary to determine how the beneficial effect of liver in counteracting thyrotoxicity is exerted.

The antithyrotoxic factor(s) is not destroyed by heating in neutral, acid, or alkaline suspension. Its presence in liver powder 1:20 indicates it to be water soluble. The factor(s) reported in this paper does not appear to be identical with the monkey anti-anemia factor (also present in liver), since the latter factor is thermolabile.

While this paper was in preparation, Ershoff reported the presence of a factor in liver, other than the known B vitamins, which was necessary for the growth of immature rats fed dessicated thyroid. The results reported in this paper are in agreement with his data. Work is now in progress on the fractionation of liver preparations in order to determine the properties of and to purify the active material observed in these studies. Progress which has been made in that direction will be reported in a later paper. (J. Nutrition, 10 Oct '47 - J. J. Betheil et al.)

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The Clinical Use of Di-Isopropyl Fluorophosphate (D.F.P.) in Chronic Glaucoma: Dr. William G. Marr, working at the Wilmer Ophthalmological Institute of the Johns Hopkins Hospital and University, carried out a study on the use of D.F.P. in 32 eyes with chronic glaucoma in which the glaucoma previously was uncontrolled by the use of such miotics as pilocarpine (1-percent or 2-percent), eserine (1/4-percent), and furmethide (10-percent).

A patient was considered as successfully treated with D.F.P. when (1) he was willing to use the drug sufficiently long to permit a minimum observation

period of four months, and (2) as a result of treatment, (a) the ocular tension as measured by a Schiotz tonometer was maintained at or below 30 mm. Hg and (b) the visual field was maintained at pretreatment levels provided there was no other obvious reason for a reduction in vision.

A patient was considered unsuccessfully treated when (1) he was unwilling to continue the medication because of its induced ocular pain or visual symptoms, and (2) during treatment, (a) the tension was not controlled at 30 mm. or less, (b) the visual field showed further loss, and (c) the visual acuity was reduced.

In this series D.F.P. was used in 0.05- and 0.1-percent concentrations in peanut oil, and the frequency of instillation varied from once every two days to twice daily. This is essentially the same concentration and frequency of instillation employed both by Leopold and Comroe and by McDonald.

In the 32 eyes of this series, D.F.P. was ineffective in 27. In 3 of the 27 failures, the drug was discontinued early because of pain which was so severe that the patients refused further treatment. In the remaining 24 eyes, D.F.P. did not control the tension within satisfactory limits for four months.

The complications of D.F.P therapy which have been mentioned in the literature are: (1) the severe eye or brow ache which is especially common during the first few days of therapy; (2) the blurring of vision caused by ciliary spasm; and (3) the occasional increase in tension which D.F.P. may produce.

The following complications occurred in the 32 eyes of this series. Four patients including one aphakic experienced so much pain that in three the therapy was discontinued (as mentioned previously), and in the fourth, morphine was required the first night to alleviate the pain. This patient was subsequently carried for several days without pain on D.F.P. Two patients with aphakic eyes during the first three days of therapy also experienced mild pain which was not severe enough to make them unwilling to use the medication.

Three patients with glaucoma simplex became so artificially myopic from ciliary spasm induced by D.F.P. that the resultant vision was unsatisfactory. For example, one of these patients had 20/20 corrected vision prior to the instillation of D.F.P. While receiving D.F.P. (1 drop of 0.05-percent solution, twice daily) in the left eye, her vision varied on different visits to the clinic from 20/50 to 20/100. A manifest refraction on a day in which the vision was 20/70 showed that a -2.5D. sph. lens was required to give 20/20 vision. Because of the variability of the ciliary spasm in this case, the induced myopia could not be satisfactorily corrected by a permanent change in the spectacle lens. In three of four eyes with chronic congestive glaucoma, the anterior chamber became more shallow after the use of D.F.P., without any reduction in tension. A reduction in depth of the anterior chamber was also noticed in several eyes with glaucoma simplex.

The advantages reported for D.F.P., when it satisfactorily controls the tension, are the convenient infrequency of administration and the absence of a local sensitivity reaction. The advantage of fewer daily instillations is somewhat offset by the pain which may occur and the temporary myopia which may result. One patient treated with D.F.P. but not included in this series is of especial interest. In this patient, the use of D.F.P. apparently caused a ciliary spasm so severe that the resultant traction on the choroid and retina produced a retinal detachment.

From this study on chronic glaucoma, it would appear that when other miotics such as pilocarpine, eserine, and especially furmethide fail to control the tension, D.F.P. in the concentrations used has little chance of success. Furthermore, although D.F.P. may be ineffectual, it is not always innocuous. (Am. J. Ophth., Nov. '47 - W. G. Marr)

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Reports on USN Research Projects:

An Evaluation of Three Clinically Accepted Antimonial Compounds in Experimental Schistosomiasis Mansoni. The present study was undertaken to provide information concerning the action of fuadin, anthiomaline, and tartar emetic in experimental schistosomiasis, and to establish standards for the future evaluation of new agents prepared for the chemotherapy of schistosomiasis.

White mice were infected with 300 cercariae of Schistosoma mansoni and, after a period of six weeks, were treated with one-half the LD_{50} of either fuadin, anthiomaline, or tartar emetic. The drugs were administered intraperitoneally either once daily for two weeks, twice daily for two weeks, or twice daily for one week.

The anthelmintic action of fuadin, and likewise that of tartar emetic, is the same whether administered either once daily or twice daily for two weeks. On the other hand, the anthelmintic effect of anthiomaline is markedly improved when the dosage is increased to two injections per day for either one or two weeks. Considering both the mortality rates with the various dosage schedules and the therapeutic results in the survivors, fuadin is the best drug under the regimens used.

In untreated mice the parasites are distributed in approximately equal numbers between the liver and the mesenteric veins, but in mice receiving treatment the worms in the mesenteric veins migrate to the liver. This phenomenon renders the stool examination an unreliable index of infection in mice under treatment with an effective drug. (Proj. X-535 Rep. No. 11, 6 Oct '47, Nav. Med. Res. Inst., Bethesda, Md. - J. H. Killough)

Transfer of Cancer Patients: In a recent survey of the records in 87 admissions for cancer, taken at random, at one of the hospitals especially designated for the treatment in such cases, it was revealed that in the transfer of the patients to this hospital there had been an average delay of 22 days; and of the 87 records studied, in 35 it was indicated that there had been a delay of more than 44 days.

It is believed that some of these delays, which are inimical to the best interests of the patient and to the Naval Service, resulted from:

(a) Failure on the part of the medical officer to consider cancer in evaluating the original lesion.
(b) Failure to make a complete pathological study of all excised tissue.

Medical officers are therefore urged: (a) to maintain a clinical awareness of cancer at all times; (b) to make a thorough pathological study of all excised tissue for evidences of cancer; and (c) to transfer every patient known to have cancer with as little delay as possible to one of the hospitals designated in paragraph 16B18, MMD. (Professional Div., BuMed)

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Available Residencies in Naval Hospitals and Training in Physical Medicine: The majority of residencies in Naval hospitals are filled at the present time. However, excellent approved residencies are available in anesthesiology, ophthalmology, otolaryngology, radiology, pathology, and urology. Medical officers who are interested in a career in these specialties should make application for residency training in their chosen specialty in accordance with the application form outlined in the News Letter of 23 May 1947.

A one-year Fellowship in Physical Medicine is available to medical officers of the regular Navy at the Mayo Clinic beginning every quarter. This instruction is given in connection with a grant from the Baruch Committee on Physical Medicine. Applications or requests for further information are desired from interested medical officers. (Professional Div., BuMed)

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Change in Instructions for Requesting Copy of NAVY DEPARTMENT GENERAL ORDERS: Activities requiring copies of Navy Department General Orders should address their letters of request to BuPers instead of to BuMed (see "Manuals and Publications for Dental Departments," page 28 of News Letter, Vol. 10, No. 9 of 24 Oct 1947). (Dental Div., BuMed)

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Transfer from the Dental Corps, USNR, to the Dental Corps, USN: On 13 November 1947 the President approved change Number 6 in the Regulations Governing the Transfer of Reserve and Temporary Officers of the Navy and the Marine Corps to the Corresponding Regular Service Pursuant to Public Law 347, 79th Congress, Approved 10 May 1946. This change provides that officers requesting transfer in the Medical, Dental, Medical Service, Hospital or Nurse Corps are not required to serve on active duty for at least six months as a commissioned, commissioned warrant, or warrant officer in order to be eligible for consideration for transfer. Naval Reserve dental officers who serve on active duty at any time during World War II may now apply for transfer to the regular Service. Attention is invited to the fact that, for the purpose of fulfilling the active duty requirement to establish eligibility for transfer from the Naval Reserve to the regular Navy, World War II has not yet been declared ended. (Dental Div., BuMed)

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Now Available, Certain Items Listed in Addenda of Army-Navy Catalog of Medical Materiel: See the first paragraph of the following notice for the list of items which were formerly "Not Yet Available for Issue" but can now be furnished by Naval medical supply depots.

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Changes in Army-Navy Catalog of Medical Materiel: 1. The items below which are listed as not yet available for issue in the Addenda to the Army-Navy Catalog of Medical Materiel, as held by Naval activities, are now available for issue by Naval medical supply depots:

1-330-320 Penicillin, Ophthalmic Ointment:

Note: Suggested initial amount to be requisitioned by field activities: For hospitals and large dispensaries - 144 units. Ships and Shore Stations 1 unit per 100 personnel. Attention invited to the fact that this item is deteriorative and consequently should not be over stocked.

3-000-755 Adapter and Electrode Set, Eye Surg.:

Note: For issue to hospitals, hospital ships and large dispensaries having an electrosurgical unit; maximum of one (1) unit per activity.

3-098-150 Bistoury, Probe Pointed, Straight, 2 inch:

Note: For general issue to all activities having operating room facilities.

3-145-615 Battery, Dry Cell, A, 1.5 volt, Burgess No. 1:

Note: For issue to activities having cardiograph facilities.

3-184-850 Electrode, Cautery, Nasal, Knife Pt.:

Note: For general issue to all ships and stations having electro-cautery apparatus.

3-184-855 Electrode, Cautery, Nasal, Needle Pt.:

Note: For general issue to all ships and stations having electro-cautery apparatus.

3-462-220 Cylinders, Crossed, Plus and Minus 25:

Note: For issue to activities equipped to do eye refractions.

3-462-225 Cylinders, Crossed, Plus and Minus 50:

Note: For issue to activities equipped to do eye refractions.

3-491-700 Needle Hypodermic, 17 Gage, 2 inch, 12s:

Note: General issue to all activities having a medical officer.

7-088-425 Table Anesthetist CRM:

Note: For issue to hospitals: 2 units per each hospital.

2. The below listed item is to be added to the Addenda to the Army-Navy Catalog of Medical Materiel as NOT available for issue:

5-576-000 Stick, Orangewood, 25s:

3. Make the following correction to Official Change No. 2 to the Army-Navy Catalog of Medical Materiel:

Page 2 Delete 4-365-850 Pipette, Milk: Capacity 17.6 ml. and insert "4-365-860 Pipette, Milk Diluting".

(Materiel Div., BuMed)

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Schedule of Sectional Meetings of American College of Surgeons for 1948: The Board of Regents of the American College of Surgeons has authorized six sectional meetings for the year 1948. A Committee on Arrangements has been

selected in each city where a meeting is scheduled, and it will work closely with the central office. A most interesting program is being developed for each meeting. As has been the custom in the past, there will be two conferences running concurrently: one for the Fellows of the College and other members of the medical profession, and the other conference for the hospital representatives. A schedule of the meetings follows:

Date	City	Headquarters
Tuesday and Wednesday 20 and 21 January	Toledo	Commodore Perry Hotel
Monday and Tuesday 26 and 27 January	Atlanta	Ansley Hotel
Friday and Saturday 30 and 31 January	Oklahoma City	Oklahoma-Biltmore Hotel
Monday and Tuesday 1 and 2 March	Denver	Cosmopolitan Hotel
Monday and Tuesday 15 and 16 March	Minneapolis	Nicollet Hotel
Monday and Tuesday 17 and 18 May	Halifax	Nova Scotia Hotel

Those who plan to attend a sectional meeting may select the meeting which in place or time is most convenient.

NOTE: Medical officers who desire to attend these sectional meetings may be given "Authorization Orders" (no expense to U.S. Government) upon request to BuPers via commanding officer and BuMed. (Professional Div., BuMed)

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Course in Medical Aspects of Radiations: The Bureau of Medicine and Surgery announces a series of lectures relating to (1) the biological effects of ionizing radiations, (2) radioactive isotopes, and (3) radiological safety. This course of lectures will be given at the National Naval Medical Center, Bethesda, Maryland, commencing on 18 February and ending 27 February 1947. The hours are from 9 to 4. The speakers scheduled are outstanding men in their respective fields; hence an interesting and informative series is assured.

These lectures are being conducted under the auspices of the Bureau of Medicine and Surgery and the American College of Physicians. All officers of the Medical Departments of the Army and Navy, regular and Reserve, officers of the USPHS, and physicians of the VA who are interested in the medical aspects of radiations are invited to attend. Civilian physicians desiring to attend

may make application to the American College of Physicians. The American College of Physicians will also announce this course in one of their postgraduate bulletins.

Officers of the Medical Department of the Navy on active duty may be given "Authorization Orders" (no expense to the U. S. Government) to attend this course. Those interested should forward a request to BuPers via their commanding officer and BuMed. (Professional Div. and Atomic Defense Div., BuMed)

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Secretary of the Navy Appoints Outstanding Civilian Dentists as Honorary Consultants to Surgeon General: The Navy Department has announced the appointment of Clyde E. Minges, D.D.S., President-Elect of the American Dental Association, and J. L. T. Appleton, B.S., D.D.S., Dean of the University of Pennsylvania, School of Dentistry, as the first two Honorary Dental Consultants to the Surgeon General of the Navy. The Bureau of Medicine and Surgery has had the benefit of the services of a group of outstanding civilian physicians in a consultative capacity in dealing with many problems during the past several years. The two newly appointed Dental Consultants met with this group last week to assist the Surgeon General in formulating professional policies and standards.

Doctor Minges was graduated from the University of Louisville, School of Dentistry in 1919 and has practiced general dentistry in Rocky Mount, North Carolina, since that time. In addition to being elected to the highest office of the American Dental Association, he has held numerous important civic and professional positions, including those as President of the North Carolina State Dental Society, Chairman of the Publication Committee of the American Dental Society, and Member of the Medical Care Commission of North Carolina.

Doctor Appleton was graduated from the University of Pennsylvania, School of Dentistry in 1914 and is an outstanding author, research investigator, and educator. In addition to being the Dean of the University of Pennsylvania, School of Dentistry, he is Professor of Bacteriopathology. He is Directing Chairman of the Editorial Board of "Dentistry - A DIGEST OF PRACTICE" and is a member of numerous scientific and professional groups including The National Research Council, The American Dental Association Committee of Research, and The International Association for Dental Research. (Dental Div., BuMed)

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Copies of NavMed Dental Forms and Reports: The number of copies of NAVMED dental forms and reports which are required by the Bureau of Medicine and Surgery and which should be forwarded to cognizant staff or district dental officers is stated on the various forms and in the instructions for submitting them in the Manual of the Medical Department.

Copies in excess of those desired should not be submitted. To do so is a waste of stationery and printing and consequently a waste of funds, in addition to the creation of unnecessary clerical work and confusion in the offices in which they are received.

All dental officers who submit NAVMED dental forms or reports should ascertain the number of copies which are required and not submit any more than the instructions specify. (Dental Div., BuMed)

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Three New Admirals in Navy Dental Corps: On 13 December the President approved the recommendations of the first selection board for the promotion of dental officers to flag rank under the Officer Personnel Act of 1947. Alfred White Chandler, Spry Owen Claytor and Clemens Vincent Rault were selected for promotion to the grade of Rear Admiral.

The Act of 22 August 1912, which created the Navy Dental Corps, did not provide for the advancement of dental officers beyond the rank of lieutenant (junior grade). The Act of 29 August 1916 created the ranks of lieutenant and lieutenant commander in the Dental Corps. In 1926, legislation provided for the promotion of dental officers to the rank of captain. A bill initiated and supported by the American Dental Association became the Act of 12 December 1942 and established permanent rank for one rear admiral in the Dental Corps.

The Officer Personnel Act of 1947, which was strongly supported by the American Dental Association, provides that the number of rear admirals in the Dental Corps be in the ratio of one for every 200 dental officers on active duty. Dental officers are now afforded an opportunity to advance to flag rank equal to that in any other naval staff corps.

The three new Dental Corps admirals are officers of outstanding achievement in naval dentistry. They have been long recognized as capable leaders in the profession and in the Navy.

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ALSTACON 28 November 1947

Subj: Nurse Corps, USN, Transfer to

Opportunity to transfer to the regular Navy Nurse Corps is now available to all members of Nurse Corps Reserve and former members Nurse Corps and Nurse Corps Reserve who are single and have not reached their thirty-fifth birthday.

Information regarding this program will be released in near future by circular letter.

--SecNav

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Op24B/cj, Serial: 692P24 19 November 1947

To: All Ships and Stations

Subj: U. S. Naval Dental Clinic, Pearl Harbor, T. H., Command Relations of

Ref: (a) SecNav ltr Op24B/avp Serial 250P24 dtd 22 April 1947 (N.D. Bull. 47-389).

1. The U. S. Naval Dental Clinic, Pearl Harbor, T. H., established by reference (a), is hereby placed under a Dental Officer in Command in lieu of an officer in charge.

2. Logistic support for the naval personnel of this activity will continue to be provided by the Pearl Harbor Naval Shipyard, Pearl Harbor, T. H.

--OpNav J. L. McCrea

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Circular Letter 47-164 25 November 1947

To: All Ships and Stations

Subj: Separation from the Naval Service of Personnel Having a Venereal Disease, Procedure for

Refs: (a) BuMed-MarCorps-BuPers Jt. Ltr. BuMed-RP-IMB, P2-5/P19-1, C/L 45-198; MarCorps 1865-20; BuPers P2-5 of 2 Aug 1945, NDBul, Jul-Dec 1945, 45-998 P-723. (Corrected).
(b) Ltr. BuMed-Y-jk, QR/P19-3 to Distribution List dtd 2 Nov 1945.

Refs: (c) Ltr. BuMed-Y-jk, P19-1/P3-1, C/L 45-272 to All NavSepCens and MarCorps SepComp, dtd 20 Nov 1945.

Encl: 1. (HW) Separation Epidemiological Report.

1. Paragraph 8 of Ref. (a) is hereby cancelled and superseded. Enclosure (A) of Ref. (a) is hereby cancelled since the U. S. Public Health Service Regional Separation Centers are no longer in operation. Refs. (b) and (c) not to or needed by all are herewith cancelled.

2. The general policies expressed in paragraph 6 of Ref. (a) (as modified) are interpreted in the case of venereal disease to mean that no person with venereal disease in a communicable state shall be released from the naval service until the individual has been rendered noninfectious and not a menace to the public health. These policies shall be effectuated as follows:

(a) A presumptive and/or standard Kahn serologic test for syphilis shall be made on all persons about to be discharged or released from active duty. This test must be made within seven (7) days of the expiration of enlistment or date of discharge and the results recorded in NavMed H-8.

(b) Personnel, who on physical examination have signs, symptoms or findings of a venereal disease in an infectious state, shall be retained in service and transferred to a naval hospital for further diagnostic study. This will not include individuals whose only evidence of a venereal disease is a positive or doubtful serologic test.

(c) All Health Records shall be thoroughly checked and those containing an entry indicating that the individual has or has had a venereal disease, or that the blood test made just prior to separation is reported as positive or doubtful, shall be reviewed by a Medical Officer and the individual grouped in one of the following categories and handled accordingly:

CATEGORY A: Includes all personnel who have had a history of venereal infection with adequate follow-up examinations, including, if possible, spinal fluid examinations and blood determinations in syphilis cases. Blood tests should also be performed on gonorrhea cases at least four (4) months after treatment in order to determine if this disease masked an undetected case of syphilis.

Procedure: These individuals shall be personally interviewed and given both verbal and printed advice (NavMed 911) relative to their status and previous treatment. FSA-USPHS Form 9576-B (Separation Epidemiological Report) is not required in these cases.

CATEGORY B: Includes all personnel who have a history of venereal infection within a time period, and personnel with a clinical course or with incomplete treatment, who require further follow-up examinations or treatment before reasonable assurance of cure can be given. (Includes syphilis treated within

one (1) year of separation and gonorrhea treated with penicillin within four (4) months of separation.)

Procedure: (a) These individuals shall be personally interviewed and given both verbal and printed advice (NavMed 912) relative to their status and previous treatment.

(b) Instruct the individual to report to his private physician, to a Rapid Treatment Center, or to a Venereal Disease Clinic near his place of residence for follow-up examinations.

(c) Complete FSA-USPHS Form 9576-B (Separation Epidemiological Report.)

CATEGORY C: Includes all personnel who have a positive or doubtful separation blood test but no history of venereal infection and personnel whose physical examination reveals no clinical signs or symptoms of venereal disease.

Procedure: (a) These individuals shall be personally interviewed and given both verbal and printed advice (NavMed 913) relative to their status. They should be given either the privilege of receiving hospitalization and treatment or separation from the service. They should be informed, however, that if complications develop and they have not received treatment while in service, there is a possibility they might be declared ineligible for benefits of service-connected disability.

(b) If treatment in the service is elected, transfer to a naval hospital for diagnostic study. If indicated, treatment in the hospital should consist of a standard course of therapy. An individual need not be held for follow-up examinations but should be instructed to consult his private physician or report to a Rapid Treatment Center or Venereal Disease Clinic near his place of residence. Upon discharge from the hospital, handle as in Category B.

(c) If treatment in the service is not elected, an individual should be referred to his private physician, to a Rapid Treatment Center, or to a Venereal Disease Clinic for treatment and follow-up examinations.

(d) Complete FSA-USPHS Form 9576-B (Separation Epidemiological Report). A notation of any pertinent information (recent malaria, smallpox vaccination, etc.) contained in the Health Record that might explain the serological reaction should be placed under "Remarks" on this form.

3. The Separation Epidemiological Report (FSA-USPHS Form 9576-B) shall be completed in quadruplicate on individuals falling within Categories B and C and shall be forwarded as follows: Original copy to BuMed; second copy to the Veterans Administration, Dermatology and Syphilology Section, Room 2049, Munitions Bldg., Washington, D. C.; third copy to the State Health Department of the state to which the individual goes after separation; and fourth copy to the individual. Instructions on preparation of the Separation Epidemiological Report (FSA-USPHS Form 9576-B) are contained in Enclosure 1. NavMed 911, 912, and 913 as appropriate, shall be given to individuals in each of the above categories. These forms should be carefully explained to the patient and should be read over with the patient to insure that he understands the contents.

4. Excepted from the provisions of Paragraph 2, subparagraphs (b) and (c) are all persons who are to be immediately reenlisted and have a positive or doubtful serologic test. Such persons may be reenlisted and transferred to a naval hospital for further study and treatment, if necessary.

5. When referring patients to civilian health agencies, reference should be made to the 1946 Directory of Venereal Disease Clinics (issued by the U. S. Public Health Service as Supplement #4 to Journal of Venereal Disease Information), and to the list of Rapid Treatment Centers contained in the Journal of Venereal Disease Information, Vol. 28, No. 4, April 1947.

6. Consultation and assistance in implementing the above procedures will be available from District Venereal Disease Control Officers upon request to the District Medical Officer or River Command Senior Medical Officer.

H. L. Pugh	J. W. Roper	A. A. Vandegrift
BuMed	BuPers	MarCorps

NOTE: Enclosure not reproduced in Medical News Letter.

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Circular Letter 47-165 26 November 1947

To: Naval Hospitals; Naval Training Centers, Great Lakes, Ill., and San Diego, Calif.; Naval Academy; Hospital Corps School (Intermediate), Portsmouth, Va.; Marine Corps Recruit Depot, Parris Island, S. C.; Marine Corps Base, San Diego, Calif.

Subj: Radium Plaque Adaptometer Night-Vision Testing of Naval Personnel, Instruction Pamphlet and Form for

Ref: (a) BuMed Cir Ltr No. 47-115

Encl: 1. (HW) Five copies of NAVMED-1233 (9-47).

1. Five copies of NAVMED-1233 (9-47), INSTRUCTIONS FOR OPERATION AND MAINTENANCE OF RADIUM PLAQUE ADAPTOMETER AND FOR ADMINISTERING NIGHT VISION TESTS, are enclosed herewith. These pamphlets are being stocked at BuMed, and additional copies will be available upon request.

2. The forms, NAVMED-1232 (10-47), NIGHT VISION TEST (Radium Plaque Adaptometer), referred to in paragraph 5, page 6, of enclosure 1, are stocked in all district publications and printing offices, and requiring activities shall address their requests thereto.

--BuMed. C. A. Swanson

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Circular Letter 47-166 28 November 1947

To: All Shore Stations

Subj: Medical Services Rendered Civil Employees

Refs: (a) BuMed Circular Letter 47-6 dated 22 January 1947 (cancelled).
(b) Sec. 9 (as amended by Act of June 26, 1926) United States Employees' Compensation Act of 7 September 1916.
(c) Sec. 2.1 - U.S. Employees' Compensation Commission Regulations governing the administration of the United States Employees' Compensation Act of September 7, 1916, as amended, Relating to Civil Employees of the United States, and as extended to Emergency Relief Employees and others.
(d) Public Law 658 - 79th Congress.
(e) BuMed Circular Letter 45-163.

This letter from the Chief of BuMed states that reference (a) was cancelled in the latest edition of the Bulletin of Bureau of Medicine and Surgery Circular Letters as having served its purpose, and that this circular letter is issued for the purpose of clarification and to supersede paragraph 13 of reference (a) which required additional data on NavMed E. The letter points out that from reports received since promulgation of reference (a), it is obvious that the status of civilian employees coming within the purview of references (b) and (c) and those within the purview of reference (d) has been misinterpreted in many instances.

Reference (b), (c), and (d) are quoted in part for information and guidance:

(a) Reference (b), states in part "That for any injury sustained by an employee while in the performance of duty, whether or not disability has arisen, the United States shall furnish to the employee all services, appliances, and supplies prescribed or recommended by duly qualified physicians which, in the opinion of the commission, are likely to cure or to give relief or to reduce the degree or the period of disability or to aid in lessening the amount of the monthly compensation. Such services . . . ."

(b) Reference (c), states in part "All medical services, appliances, drugs, and supplies which in the opinion of the Commission are necessary for the treatment of an injury as provided by Section 9 of said Act (reference (b)) shall be furnished to employees of the United States and to others by law entitled to medical and other benefits by or upon the order of United States Medical Officers and hospitals, when available and practicable, for injuries sustained while in the performance of duty, whether resulting in loss of time or not, ..."

(c) Reference (d), states in part "To provide for health program for Government employees - That, for the purpose of promoting and maintaining the physical and mental fitness of employees of the Federal Government, the heads

of departments and agencies, including Government-owned and controlled corporations, are authorized within the limits of appropriations made available therefor, to establish by contract or otherwise, health service programs which will provide health services for employees under their respective jurisdictions: Provided, That such health service programs shall be established only after consultation with the Public Health Service and consideration of its recommendations, and only in localities where there are a sufficient number of Federal employees to warrant the provision of such services, and shall be limited to (1) treatments of on-the-job illness and dental conditions requiring emergency attention; (2) pre-employment and other examinations; (3) referral of employees to private physicians and dentists; and (4) preventive programs relating to health. . . ."

It is stated that the appropriation "Medical Department, Navy" has been made available to carry out the provisions of reference (d).

For shore stations having a complement of civilian employees of 100 or more certain data concerning medical services rendered to civilians is to be submitted quarterly as an addenda to NavMed E required by reference (e) in order for BuMed to be able to provide, as required, adequate statistical data on Public Law 658 - 79th Congress. For shore stations having a complement of less than 100 civilian employees, this letter is for information only.

Note: This letter in full appears in the Navy Department Bulletin of 30 November 1947.

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Circular Letter 47-167 4 December 1947

To: MedOfCom, All NavHosps.

Subj: Armed Forces Radio Service in U. S. Naval Hospitals

Ref: (a) BuMed CirLtr No. 47-117 to All NavHosps, dtd 2 Sept 1947.

This letter from the Chief of BuMed states that because the replies from reference (a) indicate that most hospitals are not equipped with the radio equipment necessary to receive and re-broadcast to the bedside the standard radio broadcasts and/or the transcribed program material issued by the Armed Forces Radio Service, and that for the most part local recreation funds are reported to be insufficient to provide such equipment, it is considered not practicable to include all naval hospitals under the Armed Forces Radio Service Program at this time.

In the several instances where the hospitals concerned have reported facilities available and have indicated a desire to receive Armed Forces Radio Program material, the Bureau has requested the Armed Forces Radio Service to add their names to the mailing list. It is stated that this letter shall not be

construed to prevent the procurement and installation of radio equipment otherwise authorized if necessary funds can be obtained from the local or district command recreation fund.

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Circular Letter 47-168 10 December 1947

To: All Ships and Stations

Subj: Medical Training Films and Other Medical Audio-Visual Aids, Production and Procurement of

Ref: (a) CNO ltr OP-34N/kt. File: P11-1. Serial 859P34 dtd 10 June 1947

This letter from the Chief of BuMed directs that ships and stations do not produce independently medical training films and other training aids or procure them from various sources other than naval, but to refer to BuMed for approval and processing through established channels all proposals or requests for the production or procurement of medical audio-visual training aids.

Note: This letter in full appears in the Navy Department Bulletin of 15 December 1947.

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Circular Letter 47-169 11 December 1947

To: MedOfsCom, All Naval Hospitals

Subj: Cross-Index System for Clinical Records

Encls: A to G (HW) Abstracts from Cross-index Summary Reports

This letter from the Chief of BuMed states that a review of the reports covering the first quarter's operation of the new cross-index system for clinical records indicates that the system was operating satisfactorily in almost all hospitals. The varying forms in which the report was submitted show that the system is being adapted to local needs. A number of reports embodied ideas which it is believed will be of interest and value to other hospitals. A few reports failed to show a summary of the surgical index or the special study file. Each of the three sections of the index is necessary for proper access to the records, and each should be summarized in the quarterly report. Enclosure A (not reprinted here) which shows a very informative summary that was included in one report, tabulating the activity of the various services is extremely useful for compiling reports required in connection with internships and residencies. A method by which such a summary may be obtained is to set up a card in the special study index for each service or specialty for which a patient

count is desired. Enclosures B through F (not reprinted here) illustrate various forms in which the summary was presented. It is not planned to require a standard form of quarterly summary, since the needs of hospitals will vary and it is desired that the cross-index system shall primarily serve local needs. The enclosed abstracts are from both large and small hospitals, with and without residency training programs. A review of these abstracts will be useful in determining the features that are most adaptable to local needs. Some hospitals have set up a card in the special study index for deaths, regardless of diagnosis, and use it for computing percentage of autopsies. One hospital suggested the addition of a symbol to indicate race or color.

The type of items listed for the special study index showed the widest variation, indicating the differing clinical interests in the various staffs. The number of items so listed also showed wide variation. The fact that some hospitals had set up large numbers of special study items covering fields of interest in many different specialties shows that the potentialities of this cross-index system as a research tool are being realized and utilized.

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Circular Letter 47-170 11 December 1947

To: AlStaCon

Subj: Routine Roentgenographic Examinations of the Chest of Civilian Employees of the Naval Shore Establishment

Refs: (a) Act approved Aug. 8, 1946, Chapter 865, 60 Stat. 903 (5 U.S.C. 150).
(b) Para. 21103, MMD.

1. In order to (1) discover individuals employed or seeking employment within the Naval Shore Establishment who have unsuspected tuberculosis or other disease evidence of which appears in the x-ray film of the chest, (2) permit the early treatment of such individuals, (3) protect the health of their naval and civilian fellow workers, (4) increase the efficiency of the Navy, and (5) contribute to the national effort in the control and eradication of tuberculosis, the program embodied in the following paragraphs is hereby established.

2. Routine Roentgenographic Examinations of the Chest.

(a) Whenever practicable, a roentgenographic examination of the chest shall be made as a part of the physical examination for employment within the Naval Shore Establishment. If it is impracticable to obtain the examination, or to have the examination interpreted, arrangement for such examination shall be made at the first opportunity.

(b) Roentgenographic examination of the chest of all persons employed within the Naval Shore Establishment, shall, if practicable, be made at least once a

year. Personnel who have roentgenographic findings of possible future clinical significance shall receive the examination every six months, where possible, using 14 x 17 inch film. Annual examinations conducted at activities having access to stationary photofluoroscopic equipment shall be scheduled in approximately six equal groups during the months April to September in order to avoid undue drain on available film.

(c) Roentgenographic examination of the chest of all persons employed within the Naval Shore Establishment shall be made, when practicable, immediately prior to leaving employment, except when such examination has been made, and recorded as without defect, within the previous six months.

(d) The above directives do not cancel or modify current instructions requiring x-ray examinations of the chest of employees engaged in certain hazardous occupations.

3. Disposition of Personnel with Defects. Individuals in whom the photofluorographic film discloses abnormal conditions shall be reexamined by means of a 14 x 17 inch film prior to final action in their cases. The Office of Industrial Relations will issue instructions as to the procedure in handling the disposition of active cases by leave or separation of the employee.

4. Equipment, Personnel, and Supplies.

(a) All Naval and Marine Corps activities with the necessary x-ray equipment shall be considered available for these examinations and, whenever practicable, the examinations shall be made by the photofluorographic technic for conservation of film. Activities which have no access to stationary photofluorographic equipment shall arrange with the Commandant of the appropriate Naval District for the temporary assignment of a mobile photofluorographic unit.

(b) Professional and technical personnel and supplies for making and interpreting the examinations shall be provided by the Bureau of Medicine and Surgery. Additional clerical assistance and transportation to and from the place of examination, when required, shall be provided by the station concerned. Activities ordering film for this program must comply with BuMed Circular Letter 47-60. Stock piling or hoarding of film must be avoided.

(c) Contracts for securing the required examinations within the limitations contained in ref (a) shall be made only in special instances, and must be submitted to the Bureau of Medicine and Surgery for approval, in advance.

5. Reports and Returns.

(a) A report of the examination shall be entered in the record maintained on the station for the individual.

(b) The procedures prescribed in subparagraph 21103.6 of ref (b) shall be followed, with the following modifications: (NOTE: The following should not be

construed as canceling or modifying the provisions of ref (b) when Naval and Marine Corps personnel are considered.)

Para. 21103.6 (a) (1) NAVMED 1161 (Photofluorographic Log) and NAVMED 1161(a) (Following Sheets). The examinations of civilian and service personnel shall be recorded in the same log and be included in the same serial numbering, except that in the case of a civilian the photofluorogram number shall, in every instance, be followed by the capital letter "C"

Para. 21103.6 (b) Identification of Film. Place the capital letter "C" after the film number when a civilian is being examined.

Para. 21103.6 (d) (1) A separate form NAVMED 618 shall be forwarded for civilian personnel. Enter upon the reverse side of the form the photofluorogram numbers of the individuals who were reexamined by 14 x 17 inch film, and place an asterisk before the appropriate photofluorogram number when the reexamination resulted in a disqualification for employment or a recommendation for further clinical study. Individual reports of reexamination of civilians by 14 x 17 inch film shall not be forwarded with the film and reports.

Para. 21103.6 (e) A report, NAVMED 618, for the civilian examinations, in addition to a NAVMED 618 for Naval and Marine Corps personnel examinations, shall be forwarded to the Bureau with each roll of film. In the case of the report for civilians (the procedure for service personnel remains unchanged) the photofluorogram numbers of the individuals who were reexamined by 14 x 17 inch film shall be entered upon the reverse side of the form and an asterisk shall be placed before the appropriate photofluorogram number when the reexamination resulted in a disqualification for employment or a recommendation for further clinical study.

6. Requests for Review or Forwarding of Film.

(a) When request is made of the Bureau of Medicine and Surgery for an interpretation of a photofluorogram or the forwarding of a photofluorogram, the request should contain the name in full of the individual concerned, the photofluorogram number, and the date and place of the examination.

(b) Requests for an interpretation of a 14 x 17 inch film, or for the forwarding of such film, should be addressed to the station where the examinations were made and not to the Bureau of Medicine and Surgery.

Approved: W. J. Kenney --BuMed. C. A. Swanson
Acting Secretary
of the Navy

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Circular Letter 47-171 12 December 1947

To: All Ships and Stations

Subj: Venereal Disease Educational Posters, Monthly Distribution of

1. The Navy Department Coordinating Committee for Control of Venereal Disease has prepared a series of venereal disease educational posters designed for display in recreation compartments, on bulletin boards, in barracks, etc. Posters will be issued on a monthly basis in the ratio of approximately 1-100 men for display over a period of approximately 4 weeks. Each poster is to be replaced upon receipt of a new issue and should be displayed, if possible, in the same place each month.

2. Posters will be forwarded to Commandants of Naval Districts (DMO) and River Commands (SMO) for redistribution to all activities within district boundaries. Copies will be forwarded to CincPacFlt and CincLant (FMO) for special distribution as desired. Training Aids Libraries will be furnished a stock of posters for distribution as required by local requests.

3. BuMed will make distribution directly to the Commanding Officers of ships and stations outside the continental United States except those under the Tenth, Fourteenth, Fifteenth, and Seventeenth Naval Districts.

--BuMed. C. A. Swanson

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Circular Letter 47-172 12 December 1947

To: All Ships and Stations

Subj: Transfer of Inactive Medical Department Records and Medical Department Records of Disestablished Activities, Decommissioned Ships, and Ships Placed in Reserve Status.

Ref: (a) BuMed Circ. Ltr. No. 47-11, 30 Jan 1947 (NDB 31 Jan 1947, Dec 47-87).

1. Reference (a), designating the naval records management centers to which subject records should be transferred, is hereby canceled.

2. Effective immediately, all field medical records previously destined for transfer to the "appropriate" naval records management center (see Manual of the Medical Department, paragraph 12B11) shall be transferred to the Naval Records Management Center, 605 Stewart Avenue, Garden City, Long Island, New York.

3. Appropriate changes to the Manual of the Medical Department, paragraph 12B11, will be distributed in the near future.

--BuMed. C. A. Swanson

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Circular Letter 47-173 15 December 1947

To: MedOfsCom, All Naval Hospitals
MedOfCom, Naval Medical School, NNMC, Bethesda, Md.
OinC, Naval School Hospital Administration, NNMC, Bethesda, Md.
OinC, U. S. Naval School of Aviation Medicine, NAS, Pensacola, Fla.

Subj: Medical Technical Training of Enlisted Hospital Corpsmen of the Naval Reserve on Active Duty as Stationkeepers

Ref: (a) BuPers ltr Pers-400b-crk dtd 11 Sep 1947. (Same subj).

Encl: 1. (HW) Copy of ref (a).

This letter from the Chief of BuMed states that reference (a) authorizes and outlines the requirements and procedures for the assignment of enlisted Hospital Corpsmen of the Naval Reserve, serving on full-time active duty as Stationkeepers under the jurisdiction of the Chief of Naval Air Reserve Training, to full-time courses of instruction in medical technical specialties at naval medical activities, subject to the recommendation of the Surgeon General and the approval of the Navy Department. The addressees are authorized and directed to accept applicants ordered to such instruction by competent authority, and are informed concerning the training, records and disposition of subject personnel.

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